

15
PUBLIC HEALTH ACT,
(11 & 12 Vict., Cap. 63.)

R E P O R T

TO THE

GENERAL BOARD OF HEALTH,

ON A

PRELIMINARY INQUIRY

INTO THE SEWERAGE, DRAINAGE, AND SUPPLY OF
WATER, AND THE SANITARY CONDITION
OF THE INHABITANTS

OF THE PARISHES OF

NUNEATON AND CHILVERS COTON.

BY GEORGE THOMAS CLARK,
SUPERINTENDING INSPECTOR.



LONDON:

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FOR HER MAJESTY'S STATIONERY OFFICE.

1849.

NOTIFICATION.

THE General Board of Health hereby give notice, in terms of section 9th of the Public Health Act, that on or before the 8th July, written statements may be forwarded to the Board with respect to any matter contained in or omitted from the accompanying Report on the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Parishes of NUNEATON and CHILVERS COTON, or with respect to any amendment to be proposed therein.

By order of the Board,

HENRY AUSTIN, *Secretary.*

Gwydyr House, Whitehall,

1st June, 1849.

PUBLIC HEALTH ACT (11 and 12 Vict., cap. 63).

Report to the General Board of Health on a Preliminary Inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Parishes of NUNEATON and CHILVERS COTON. By GEORGE THOMAS CLARK, Superintending Inspector.

MY LORDS AND GENTLEMEN,

London, 30th March, 1849.

IN accordance with your instructions, and after notice duly given, as directed in the Public Health Act, I proceeded on the 27th of December last to the town of Nuneaton, in the county of Warwick, and held on that and the two following days public sittings in the Town Hall. On Saturday, the 30th of December, I held, also according to notice duly given, a public sitting at Chilvers Coton in the Infant School-room. I employed the remainder of these days, from the 27th to the 30th inclusive, and the whole of the 1st of January, in the examination of the above town and village, of the water-sheds above them, of the outfalls and lowlands below them, and generally in collecting materials for this report.

2. I have to acknowledge in my examination of the sources of a water supply, the personal support and aid of Mr. Newdegate, the owner of Chilvers Coton, and of property in Nuneaton, and member for the northern division of the county. Also I was accompanied during a part of my examination by the vicar, the Rev. R. C. Savage; by Mr. Hollick, a considerable mill-owner in the town; and by Mr. Scrivener, the relieving officer. The only levels obtainable were those of a very few points laid down upon the sections of the proposed Coventry and Nuneaton, and Direct Birmingham and Leicester Railways. The only plans, besides the Inch Ordnance, were a very rough and old sketch survey of Nuneaton, and an ancient parish map of Chilvers Coton.

3. Nuneaton and Coton are contiguous parishes closely connected, in the same county, hundred, and Poor Law Union; also, though their water supplies will probably be derived from distinct sources, the mains should be so connected that one may, if necessary, provide against any deficiency in the other. For all purposes of administration under the new Act the parishes should be combined. I propose, therefore, to include them in one report.

4. There is another reason why not only Nuneaton and
[12.]

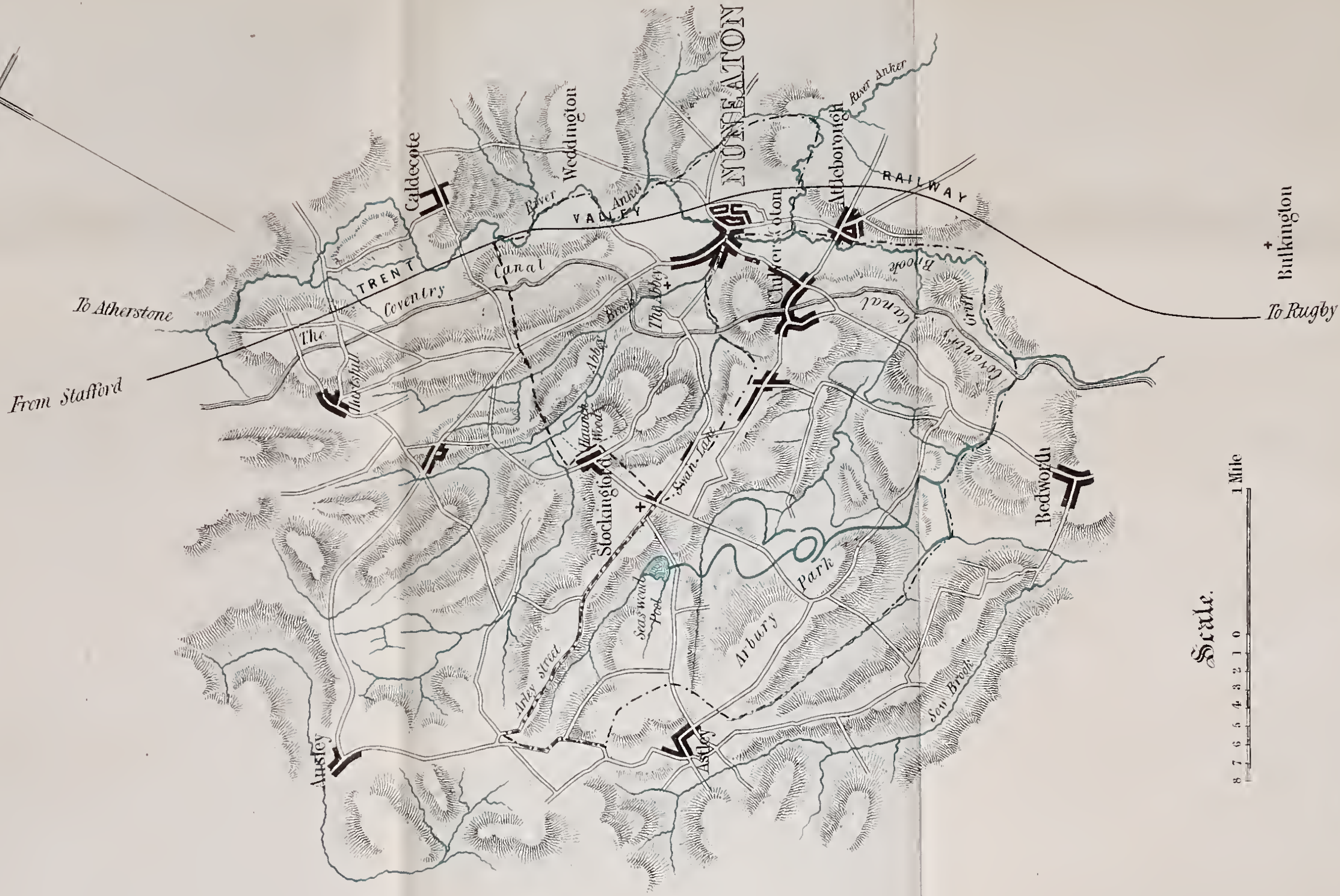
Coton, but also the contiguous parish of Bulkington, which, though I have not yet inspected, I understand to have petitioned should be included in one administrative area. These places, though populous, are scattered and very poor, and it is quite clear that any remedial measure proposed, to be practicable, must be cheap, and the works for water supply and drainage, and the repair of the highways, should be executed and maintained by one contractor, under one local board and surveyor.

5. The present is a type of very many places in the mining and manufacturing districts of this country, and in such districts it is only by a combination of several villages under one authority that that thorough economy can be attained, which alone will place the proposed benefits within the reach of poor and straggling populations. This in the present instance, however, applies to the maintenance or repair, rather than to the original execution of the works, the cost of which must of course be borne by the individual parish benefited. In my estimates of cost I have therefore been careful to keep the charges upon the two places distinct.

6. GENERAL DESCRIPTION.—Nuneaton is a considerable market town and parish, including the hamlets of Attleborough and Stockingford. It was originally supported by the nunnery which gave the distinguishing prefix to its name, and the ruins and earthworks connected with which yet remain, and may be turned in part to the present account. The town is long and straggling. It is built in the valley, and in part upon the banks of the Anker, a small stream which, rising about Wolvey and Leicester Grange, is tributary to the Tame towards Tamworth. The church and a part of the town stand upon the right bank of the stream, the larger portion of the town is built a part along the left bank, but the greatest portion extends along three roads which lead towards Coton, Stockingford and Tuttle Hill, and Atherstone, the latter being clustered with houses for about three quarters of a mile.

7. The Anker lies for about a quarter of a mile within the town. It is here a moderately rapid stream, and receives from the left or north side a streamlet which drains a considerable area, and one head of which will afterwards be referred to as the Abbey Brook. This brook joins the Anker just above a large corn-mill in the town of Nuneaton, but the bulk of Chilvers Coton, with the church, is three quarters of a mile distant, and much higher than the river, or than Nuneaton. Coton extends westwards over a high ridge, which divides the Griff Valley from the Anker, and is cut through by the Coventry Railway. The Union House and a part of the parish stand upon this ridge, probably 200 feet above the Anker, though lower than the gathering grounds to the westward.

NUNEATON AND CHILVERS COTON.



--- Proposed Boundary, Nuneaton.
- - - - - Proposed Boundary, Chilvers Coton.



8. Coton, like Nuneaton, is a scattered and straggling place. The Coventry Canal runs in one long level on the hill side, west of and above both Nuneaton and Coton and through the latter village. Though advantageous to their trade its overflows are ill arranged, and occasionally flood certain parts of the former place. Nuneaton appears to stand near the junction of the new red sandstone with the carboniferous rocks, and actually upon gravel and loam. Coton is partly upon the coal, which is worked in the parish. West of Nuneaton is a high crest of ground, lifted up by a line of intruded greenstone extending from Hartshill and Tuttle Hill. At both these places, and at Marston Jabet, $2\frac{1}{2}$ miles south, are extensive quarries whence the stone is largely exported for metalling roads, and for particular varieties of paving. The Coton clay is very celebrated, and great quantities of bricks and tiles are made here and exported by canal, sometimes to London. The brick is particularly dense and hard, possesses the valuable property of absorbing but a small quantity of water, and is excellent for paving. The general disposition of the ground in both parishes is favourable for drainage, falling eastwards towards the Anker.

9. About two miles west of Coton and Nuneaton are the church and hamlet of Stockingford, upon the ridge between the Abbey brook and the Arbury or Griff brook. The latter here feeds a sheet of about 20 acres of water, known as Seawood Pool, the private property of Mr. Newdegate. The road between Coton and Stockingford is bordered pretty thickly with cottages, all badly off for water.

10. Attleborough, the other hamlet of Nuneaton, lies east of and nearly contiguous to the village of Coton. The churches are half a mile apart, and the hamlet is rather under half a mile from Nuneaton. Attleborough stands on the right bank of the Griff or Coton brook just above its junction with the Anker. The Anker is the natural water channel of the whole district, and the Griff, Coton, and Abbey brooks are its principal tributaries here. The Abbey brook floods a part of Nuneaton, and the Anker occasionally covers a part of the road between the town and the railway station, and partially within the town.

11. In modern times the ribbon manufacture has extended from Coventry to this district. It employs a very great part of the female population. The adjacent collieries also have created a considerable demand for labour. From these two occupations the district derives its chief support.

12. The extension of the ribbon manufacture and the opening of the collieries converted Nuneaton from a village into a town, *to the government of which the old village institutions are wholly unequal.* The Manor Court has fallen into disuse,

and the roads, lights, sewers, and all public arrangements and expenditure are in the hands of the parish officers, changed annually by the vestry, *and acting necessarily without any fixed system.* Hence the work is done expensively and most inefficiently.

13. LOCAL ACTS.—There are no local Acts affecting Nuneaton or Chilvers Coton. The Coventry Canal passes through both parishes, and exercises powers over the land waters under certain restrictions specified in the Act under which it was constructed.

14. POPULATION.—In 1831 Nuneaton parish, according to the census, contained 7,020 acres and 7,799 inhabitants, dwelling in 1,735 houses; besides which were 135 uninhabited, and 6 building. In 1841 the return gave for

	HOUSES.			POPULATION.		
	Inhabited.	Vacant.	Building.	Total.	Under 20 Years.	20 Years and over.
Nuneaton township . .	1,109	111	3	4,624	2,044	2,580
Attleborough . . .	254	42	..	1,095	481	614
Stockingford . . .	314	40	..	1,386	689	697
Total . . .	1,677	193	3	7,105	3,214	3,891

Chilvers Coton, in 1831, contained 3,730 acres and 2,494 persons in 523 houses; besides 18 uninhabited, and 4 building. In 1841, the return, divided as above, gives

	HOUSES.			POPULATION.		
	Inhabited.	Vacant.	Building.	Total.	Under 20 Years.	20 Years and over.
Chilvers Coton . .	524	31	4	2,508	1,187	1,321

15. As, however, the water supply can only include the town and villages, and those detached cottages that chance to stand near the main, the houses thus to be supplied and to be rated will be, according to the books of the two collectors,

Nuneaton . . . 1,228
 Attleborough . . 304

1,532

Chilvers Coton . 490

In round numbers it appears that the present population of

Nuneaton parish [may be taken at about 7,000, and that of Coton at 2,700.

16. MORTALITY.—It appears from the petition, which is supported by the Registrar's return, that the deaths for the seven years ending 29th September, 1848, in Nuneaton, have been 1,508, or, at an annual average, 215 $\frac{2}{3}$, being at the rate of 30·7 in the 1,000 upon the population of 1841, or upon the population, as now computed, about 26·7 in the 1,000. That of the whole district, including Foleshill, Nuneaton, and Atherstone, is 21·7 in the 1,000.

17. In Chilvers Coton, the annual average of deaths for the above period have been 78 $\frac{2}{3}$, being 31·2 in the 1,000, or upon the estimated existing population 28·99 in the 1,000. I find upon looking into the condition of Nuneaton and Chilvers Coton and the hamlet of Attleborough, ample cause for this unusually high rate of mortality.

18. INSPECTION.—My attention, on my arrival, was directed by the relieving officer and one of the principal medical men to certain localities, chiefly courts, *the seats of fever and small-pox*, and those I found to be ill paved, damp, undrained, and in a very filthy and offensive condition. This description, indeed, applies in some considerable degree to nearly the whole of Nuneaton, to much of Chilvers Coton, and to the whole of Attleborough. In Nuneaton I found part of the *Abbey-street* and *Back-lane* to be very sickly quarters.

19. In these places the greater part of the population are lodged in courts communicating with the street by a narrow covered entry, and open to the fields behind. They consist of from 5 to 15 houses each, with one or two privies in common, a large open tank or cesspool; a pump is generally very near the cesspool, often a pigstye. Usually towards the field is an open stagnant ditch. In many of these courts is a common soughing tile-drain, intended to take the surface water, but fitted up with a large grating and catch-pit from whence bad smells ascend.

20. The cesspool is the greatest evil and the most constantly present. It is often 10 to 12 feet square and very deep. Into it are discharged the contents of the privy, and all the rubbish and filth of every kind from the houses. It is emptied only once or twice annually, and is in consequence often heaped up far above the top of its side walls, so as to expose a greatly increased offensive surface. In some cases the cesspool is above the highway, and the contents percolate through the walls or flow along the gutters into the street. In one other instance its walls were those of a dwelling-house, and the soil oozed through upon the floor, rendering the house from time to time uninhabitable. In one case the cesspool was enclosed

by a dwelling-house in which were persons living on each side of and above it.

21. To these cesspools and piggeries are sometimes added slaughter-houses, stables, depôts for dung collected in the streets, and various other nuisances.

22. Attleborough in all these respects is, if possible, worse than Nuneaton, though before my visit several of the worst nuisances had been temporarily amended. But bad as is its condition the houses are by no means of the lowest description, and the habits of the people within doors are not uncleanly; a proper water supply and drainage would completely alter its aspect.

23. Many of these cesspools are in the public streets, corners being built up for the purpose. Sometimes the privy itself, with or without a door, is set up at the way-side. The privies are both very bad and insufficient in number for the houses; and in no case is there any distinct place set apart for the two sexes.

24. There are few cellars and none inhabited, but there are many low lodging houses.

25. The practice of converting the interior of the smaller courts into gardens produces damp and disease, and keeps up a continual source of dirt. There is usually either none or a broken down fence, and the children and animals trespass and scatter the mud over the path. Such gardens yield no produce, and their space should be paved and a proper garden allotment and public piggeries provided outside the town.

26. The garden is often higher than the houses, and drains into them.

27. That this description is not overstated may be inferred from the returns furnished by the parish officers, whence it appears there are in Nuneaton—

Pigsties	.	.	.	287
Privies	.	.	.	385
Cesspools	.	.	.	346
Slaughter-houses	.	.	.	15

and taking the cesspools at an average of 30 square feet of area, there will be 10,380 superficial feet of offensive matter constantly evaporating in the town.

28. The annual expense inflicted upon the inhabitants individually and collectively by this state of things is very considerable though scarcely to be fairly estimated in money. It appears from the Union return that the average annual amount of out of door relief in Nuneaton parish during the last three years is rather above 1,118*l.* almost wholly expended in the dirtiest and worst drained districts. In Coton the corresponding expenditure under similar circumstances is above 490*l.* a year.

29. The difference also between the mortality of the registration district and the average of that of Nuneaton and Coton, amounting to above 6 in 1,000, represents a very considerable loss in profitable labour and a considerable actual expenditure in the support of widows and orphans.

30. **LOW LODGING-HOUSES.**—Of these there are in Nuneaton six, composed of 13 rooms, containing 39 beds. This gives an average of three beds to a room, but they are very unequally divided. No reliance can be placed on the statements of the keepers of these places as to the number of their lodgers, but it is known that at particular seasons the rooms are very crowded and with persons of filthy habits and dishonest character.

31. The **PUBLIC BUILDINGS** in Nuneaton are only the church, various chapels and schools, and the town-hall. There is a lock-up house and a meat-market held under the town-hall and close to one of the most objectionable nuisances in the town. It is fortunate that fires are unknown, for there is but one fire-engine, and no water save in the river.

32. **SEWERAGE AND SURFACE DRAINAGE.**—A small and very meagre map of Nuneaton has been prepared, but there are no proper levels, or parish officers competent to take them, and no record is preserved of sewers or drains save in the memories of past and present surveyors of highways. Mr. Scrivener, late relieving officer to the Union, has paid much and well directed attention to the present state of the town and the proper remedies, and I have received from him much assistance and the full benefit of his accurate local knowledge.

33. Nuneaton town is the only one of the group that boasts any sewers at all, and these are confined to very short lengths, and so irregularly laid that in one place a large sewer discharges into a small one. In Back-street there are about 270 yards of sewer part of which is 4 feet 10 inches by 3 feet 11 inches, and 7 feet deep. This is the only sewer in the town capable of draining a cellar. In the market place are some surface culverts 15 and 18 inches diameter and a short length of 9-inch piping. In Abbey-street are 150 yards of 18-inch surface culvert and 60 yards of 9-inch piping. This appears to be the whole of the street-drainage, and even these drains are reported to be very badly laid as to level. In fact, it is scarcely possible it should be otherwise, since they have been put in by the eye. The drainage into these from the courts and alleys is by an ordinary agricultural soughing tile-drain. In other cases these soughs are carried into open stagnant ditches at the backs of the premises.

34. The presence both of a culvert where there is one, and of

a sough, is usually marked by a gutter-grate of preposterous size, beneath which is a catch-pit from whence arise stinks much complained of by the inhabitants.

35. Chilvers Coton and Attleborough are, if possible, still less provided, and yet both, no less than the greater part of Nuneaton, stand on ground with fair or very good natural falls, and materials for the construction of drains are everywhere cheap and good.

36. The SURFACE DRAINAGE in Nuneaton is carried on partly by the culverts above mentioned and partly by gutters. It is very imperfectly performed, and, in consequence, the water stands in various parts of the town. The surface drainage both in the town and village and throughout the whole of the lower parts of the two parishes is very bad indeed. All round the town and along the course of the streams the land is wet, abounding in stagnant pools, and occasionally cultivated as cabbage garden, giving out steams of unpleasant odour. This is particularly the case in the allotment grounds north of Abbey-street, in Nuneaton, and by the roadside between Nuneaton and Attleborough, and between Attleborough and its new church.

37. The cost of the sewers is included in the highway-rate.

38. The cesspools are in the hands of the house-owners and occupiers. They are emptied once or twice annually by persons regularly employed by the farmers, who purchase the manure. Its value varies, per load of two tons and a-half, from 4s. to 5s., according to its quality. It is carted off, and usually stored in a heap by the road-side. An ordinary cesspool yields about two loads annually, which probably cost the farmer about 15s. before the manure is finally spread over the land. Its use is confined strictly to arable land. According to this calculation, an annual expense of about 260*l.* is incurred in Nuneaton town alone in the use of this manure, a large part of the best of which is absorbed by the earth during its long stay in the cesspools, and which is also much mixed up with brick-bats and other unproductive rubbish. I may mention that one of the surveyors of highways, a very competent authority, estimates the expenditure on this manure at considerably above double the sum stated.

39. The inhabitants complain that the contents of the privies and cesspools are disturbed, and carted off in broad daylight, to the great annoyance of everybody.

40. As usual, there is no such thing as HOUSE DRAINAGE. In most cases, the slops of the houses are emptied into the yard and in others into the main street from the door or window.

41. WATER SUPPLY.—In neither of the two parishes is there any other permanent supply than that yielded by pumps, the water for which is much too hard for washing. The sample

taken was of 93° of hardness. The wells are from 9 feet to 20 and 25 feet deep; there are from one to two in each court.

42. For washing, the rain water is collected in tanks, with a pump, or sometimes a ladle attached; or, by the poorest, in pans set under the spouts and eaves of the roof. As the condition of these roof surfaces is for the most part foul, the water is of a dirty quality, as well as deficient in quantity; in which latter case the poor either remain unwashed, or use the hard water at a considerable expense in soda and soap. Sometimes, when within reach of the Anker, the people use its waters, which are less hard than those from the springs, or, according to the sample analysed, of 21°. Unfortunately, in the dry season, when alone needed, the river water is scanty and very dirty.

43. At Heathend, in Coton, since the working of the Arbury collieries, water has been at times very scarce. Much of the village stands very high, and upon a permeable and rifted sandstone. Mr. Newdegate has here incurred some expense, but appears to have only partially remedied the want.

44. In Nuneaton town there are about 267 pumps, the repairs of which are estimated to amount to about 66*l.* annually.

45. PAVING AND SCAVENGING.—It appears from the surveyors' returns that there are in the town of Nuneaton about 2 miles 140 yards of street, and besides this, in the township, about 2 miles 1,179 yards of highway. I have seldom seen public ways in a worse condition; and yet, upon these roads has been spent in the last nine years about 1,800*l.*, the usual rate being 5*d.* in the pound. There is the less excuse for this state of things that the Tuttle Hill stone, an excellent material, is obtained in the parish; and the town of Nuneaton and the hamlet of Stockingford, under the Enclosure Act, had a free quarry allotted to them, and thus save about 1*s.* 6*d.* per ton above Coton and Attleborough. Exclusive of this charge, the cost of the stone broken and laid upon the road is from 3*s.* to 4*s.* per ton. The township is under one surveyor, the rest of the parish under two others. *It is quite impossible, under the present village system of management, to secure either good or cheap roads.*

46. The older footways in the town are pitch paved. Of late years, a large brick block-paving has come into use. The blocks, known as "brick flags," are 9 inches by 16 by 3 inches, and cost 3*d.* each; and, when laid, about 4*d.*, or from 3*s.* to 3*s.* 6*d.* per superficial yard laid in cement. The kerb, of the same material, costs about 1*s.* the running yard fixed in place.

These bricks are made in this and Coton parish. The path thus formed is dry, pleasant to walk upon, and more durable than York paving, against which it has been here tried.

47. SCAVENGING appears to be a process unknown or unpractised in Nuneaton.

48. MANUFACTURES.—Besides the hand-loom ribbon weaving carried on in the cottages, Nuneaton contains several considerable silk factories employing, some of them, steam power; though, owing to the depressed condition of trade, not at present in active work.

49. There are six steam-engines in the town, belonging to a flour-mill, two silk-mills, a saw-mill, a tannery, and the railway station.

50. LIGHTING.—There is a gas-work in Nuneaton, and pipes are laid in that town and in Attleborough, though neither are lighted. The Company was established about 15 years ago, but brought under the operation of the General Act in 1841. For a time it appears, by the printed accounts, to have yielded a dividend, but the prices charged were absurdly high, being 12s., and recently, 10s. per 1000. The management appears to have been very inefficient, great disputes arose, and the affairs of the Company became unprosperous.

51. The present state of the town I found the subject of universal complaint. The darkness adds materially to the labours of the police, and promotes various gross immoralities. These, the darkness itself, and the dirty condition of the public ways, combine to render Nuneaton a place through which a respectable female could not safely walk after night-fall.

52. As I found the rate-payers at issue on the subject of the Gas Company, and as a large portion of them expressed themselves much dissatisfied that the Public Health Act did not extend to lighting the town, I made various inquiries into the state of the question, which appears to be substantially as follows:—

53. The sum to be raised for lighting the town is annually agreed upon in vestry. Three or five inspectors are also appointed under the Lighting Act. They issue an order to the overseers to levy the amount. The overseers settle the per centage on the rental or the rate. At this stage a difficulty arises. It is impossible, on account of bad debts, remissions, &c., so to adjust the rate as to make it produce exactly the sum granted; and, if it produces less, the overseers are held personally liable for the amount of the deficit. They are therefore careful to set the rate rather too high, and the necessity for this is so obvious that the practice does not appear to have been found fault with so long as the excess was small.

But in 1845 the vestry granted 310*l.*, and the overseers levied 493*l.* In 1846 the same was repeated, the excess being paid over to the poor's-rate In 1847 the vestry granted 140*l.*, but the rate was resisted, on the plea that the Act had not been legally adopted; the parish officers gave way and nothing was levied. There was a great dispute between the residents in the town, and the farmers living in the country, and the result was that the town was left in darkness.

54. Up to this time the rate was levied on the whole parish. In 1848 the vestry granted 150*l.*, to be levied upon the township of Nuneaton only, excluding Attleborough, in which the pipes were already laid down. The rate based upon this would have produced 261*l.* This rate, however, was disputed by a farmer not residing in the town, and, in consequence, was never actually paid. It should be stated, however, that this sum included an assessment on the railway, now under litigation, and amounting to about 250*l.* The justices usually excuse every person who is in a state approaching to poverty.

55. The question was brought before the bench of magistrates, and the practice of thus raising money in excess of the vestry grant was, of course, pronounced illegal, and the town remains unlighted.

56. A considerable number of persons, at variance on other parish matters, were in accord upon this, and complained to me upon the subject of gas, and I found all to agree that the price charged was fatal to the prosperity of the concern, as well as to the good order of the town; and that there is great want of some power strong enough to act for and control all parties in the parish, and great regret that the matter is not placed by the Public Health Act within the sphere of the local Board.

57. Since the conclusion of the inquiry, a printed paper has been forwarded to me, from which it appears that the gas works have been let, and that the lessees offer gas at various prices, according to the quantity supplied, from 6*s.* to 10*s.* per 1000 cubic feet. Of course the town supply will be charged at the former rate, but even this is high for a town on the edge of a coal-field and the banks of a navigable canal.

58. The PUBLIC NUISANCES consist of open dung-heaps, stagnant and foul pools and ditches, unmade or ill-made roads, privies having no drain, and exposed to the highways; besides, there are, as has been stated, in Nuneaton, 15 slaughter-houses. These nuisances, however, are trifling evils compared with the anomaly of a town population with a rural government, and with those disputes in the parish, which have led to the discontinuance of the gas lights.

59. BURIAL GROUNDS.—The Nuneaton burial ground is the churchyard, standing on the skirts of the town, and to which an addition has recently been made. The vicar, the first

resident for nearly a century, has introduced some very beneficial regulations for deepening graves, but a very objectionable practice still prevails of burying in wood in brick graves or vaults arched over with a light half brick vault, very scantily covered with earth. The effluvium from such graves is constant, and if opened before decomposition is complete, must be overpowering.

PROPOSED ARRANGEMENTS.

60. **WATER SUPPLY.**—The question of the water supply at Nuneaton and Coton presents only a choice of difficulties, produced by the scattered character of the population throughout a great part of the district.

61. Two conditions equally essential may be laid down at the outset; one is that it is impossible to drain the houses without a proper water supply, the other that it is impracticable to carry out any other than a very cheap system. To these two conditions I shall strictly adhere.

62. The supply required may be stated as follows:—For Nuneaton town (including a part of Coton) where there are a few and where alone there are any great consumers, 4 cubic feet or 25 gallons for each person daily.

	Cubic feet.
Nuneaton town, 4,700 inhabitants at 4 cubic feet; daily supply	18,800
Attleborough hamlet, 1,000 inhabitants, at 2 cubic feet	2,000
Railway station, about	8,000
	<hr/>
Daily supply	28,800
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	Cubic feet.
Chilvers Coton village, 2,500 inhabitants, at 2 cubic feet	5,000
Part of Stockingford, 500 inhabitants, at 2 cubic feet	1,000
	<hr/>
Daily supply	6,000
	<hr/>

63. There are various scattered houses which it is quite impracticable to include in the supply, unless as in the case of a part of Stockingford, they chance to lie upon or very near to the course of the main conduit.

64. It appears therefore that it will be necessary to provide for an actual daily demand for Nuneaton, of say 30,000 cubic feet, and for Coton of 6,000 cubic feet. Moreover, a second railway is in progress; there is an extensive and increasing colliery population in the district, and in the event of a revival of the Coventry trade, Nuneaton is sure to par-

ticipate in it, for which reasons it becomes necessary to contemplate a considerable increase in the demand, to the supply of which the sources selected should be equal. This demand may not improbably reach to double the above amount, or for the two places 60,000 cubic feet, and 12,000 cubic feet, daily. Of course, however, the arrangements now proposed are calculated for the actual demand only.

65. It would be possible, no doubt, to draw the whole of this supply from the Anker above Nuneaton, and to force it by engine power to the summit levels of the district 200 feet above the river. This, however, would involve a considerable annual expense, and that part of the main which supplied the higher, most distant, and least densely peopled portions of the town, would be expensive and not very productive.

66. For these reasons, I turned my attention to the high grounds west of the district, hoping to find there a supply equal to the demand and at an elevation such as to be independent of machinery.

67. It has been already mentioned that the Anker receives on its left bank, above and at Nuneaton, two considerable tributaries, the Griff and the Abbey brook. These both rise upon the elevated ridge of syenite and greenstone capped with new red sandstone that lifts up the coal measures, bounds the valley of the Anker, and, in fact, divides the waters tributary to the Trent and Humber from those flowing into the Avon and the Severn. From hence passes off eastwards a sort of peninsula, leaving the main ridge at Nuthurst Heath, and extending to the upper part of Coton. Arley-street runs along its axis, and Stockingford church is built upon it.

68. On each side of this Arley-street ridge is a valley. That on the south is one source of the Griff. Its head waters are collected in the large artificial lake of Seaswood Pool, and thence, after feeding various canals in the grounds of Arbury, flow by a roundabout course to Attleborough, feeding the Coventry Canal by the way. It is to this source that, naturally, Coton should look for its supply. A sample of the water of the pool analyzed by Dr. Playfair gave $11\frac{1}{2}^{\circ}$ of hardness.

69. The valley on the north of Arley-street ridge feeds the Abbey brook. It is, at its head, far deeper, more extensive, and yields much more water than the valley above Seaswood. Its waters flow past the Old Abbey and join the Anker in Nuneaton, feeding the Coventry Canal by the way. This is the source of the Nuneaton water supply. The hardness of the water is 15° .

70. Looking to the capacities of these two sources, it appears that the Seaswood Pool is fed from about one-third of a square mile of "gathering ground," for the most part, if not

wholly, very imperfectly under drained. This small area is found sufficient to feed a pool of 20 acres, and which cannot be less than an average depth of 5 feet, containing therefore above four millions of cubic feet. The Coton demand for 120 days amounts only to 720,000 cubic feet, so that about one-fifth of this reservoir is all that will be needed. It will be necessary to cleanse the pool, and to fit up one corner of it as a filter. There is no measure showing the precise height of this pool above Coton, but it is evident to the eye that it will command the whole of the village, and, if necessary, the whole of Attleborough.

71. It is proper that I should observe that this pool is not only Mr. Newdegate's private property, but that it feeds the pleasure waters in his park and grounds; hence I should not have assumed that a part of it could be made available for the uses of the village of Coton had I not understood, generally, that its owner, also the owner of Coton, was disposed to afford every reasonable facility to the measure.

72. The Abbey brook, above Haunchwood, an elevation which commands the whole town and Attleborough, drains nearly four square miles of country, an area so large as to render it quite unnecessary to enter into any calculation of its probable yield of water. In remote times this brook was dammed up at several points to supply the Abbey mill and fish stews, and the banks of these pools remain. The highest of these, at Haunchwood, has been cut away for a few yards about the sluice, so as to drain the pool, but the bank may easily be made good, and an ample reservoir secured at a very trifling expense.

73. This Abbey brook is one of the feeders of the Coventry canal, but the reservoir in question will be outside the limit of 1000 yards to which their jurisdiction is confined in the 1st clause of their Act (8 Geo. III. cap. 36), nor indeed will it interfere with their supply, since a surplus will flow down even in the driest seasons.

74. In both cases the conduit from the reservoirs may be led for a considerable distance at a very moderate inclination, and in clay piping. Afterwards, on reaching the point at which the ground dips suddenly, iron piping will be requisite, from whence the service pipes will be distributed in the usual way. By thus bringing the water from the western heights, the use of artificial power is avoided, and the mains, in their descent towards the two places, necessarily pass through the upper, most straggling, and least productive parts of both.

75. SEWERAGE AND DRAINAGE.—The disposition of the ground throughout the whole district is exceedingly favourable for drainage, there being from all parts a considerable fall towards

the Anker or its tributaries. A part of Coton will drain northwards into the Nuneaton main sewer, and a part eastward into an outfall on the Griff Brook, near Attleborough, whence the sewage of both villages will be led through Nuneaton down the right bank of the streams, in close pipes, to the common outfall below the latter town.

76. Nuneaton will be drained by main sewers down Abbey-street and Wash-lane, below which a main sewer will lead the sewage parallel to the Anker, and discharge it about a quarter of a mile below the town. A similar main sewer, receiving the drainage of the houses from the church to the railway station, will descend by the right bank of the Anker, and be conveyed across that stream to join the other sewer on the opposite bank. The two will discharge by a common outfall, which will thus receive all the drainage of Nuneaton, Coton, and Attleborough. The house, water-closet, and court drains, formed of clay piping, will fall into these main sewers.

77. Wherever land drainage is required, it will be provided for by agricultural permeable soughing tiles laid around the sewers and court drains. The surface waters will find their way very readily into the river, in part by the open gutters, and in part by the present surface drains, which will be used for that purpose only. It will be necessary to arrange with the Coventry Canal Company to discharge their waste water below, instead of into, the town of Nuneaton, and the channel of the Abbey brook, at the bottom of Wash-lane, must be cleared and deepened, so that the flood-waters may pass down without overflowing the road.

78. **BOUNDARIES.**—The whole of the proposed arrangements will be within the boundaries of the petitioning parishes of Nuneaton and Coton, but will exclude the hamlet of Stockingford and the distant parts of Nuneaton parish.

79. **SEWAGE DISTRIBUTION.**—The farmers around Nuneaton are already well aware of the value of this manure for arable land, and, as has been shown, pay for it annually a considerable sum. The proposed sewers are so arranged as to secure to the lands below and about Nuneaton the use of this manure at a cheaper rate, and in a far more efficacious form, than that in which it is employed at present.

80. It has already been stated that the sewage of Coton, Attleborough, and Nuneaton, will be combined upon a point below the latter town, near the Anker, into which the surplus may conveniently be poured. When the demand for the manure arises, it will be necessary that at this main outfall a well should be sunk and a tank formed; or, should the demand increase, even a steam-engine and pump set up, whence, by means of a main pipe, the manure may be forced up into a tank

on moderately high ground, quite clear of the town, and which, by means of branch pipes and hose, will place a copious supply at a cheap rate within the reach of all. The machinery for this sewage distribution is not included in the present estimate, nor is any credit taken for income from this source. No expenses need be incurred until the returns are certain. It is sufficient at present to point out that the main sewers are planned with reference to the use of their contents in agriculture. The details may advantageously be deferred until after the completion of the survey, which must precede all operations of any kind.

81. GENERAL OBSERVATIONS.—In preparing my estimates of the cost of the proposed water supply and drainage, I have taken the number of houses from the collectors' books, the data for expenditure from such maps and plans as were to be obtained, and the income from the produce of certain parish rates, and from the rental in the collectors' books. From these elements it appears that for a rate of 1s. in the pound in Nuneaton town and Attleborough, and a rate of 1s. 6d. in Coton, upon houses only, a complete water supply, and main and branch drainage, may be provided, the water being always on. The amount of this rate from Nuneaton town is rather under one of 6d. in the pound upon the rental of the whole parish, as rated to the relief of the poor in 1847.

82. The value of the rate is calculated upon houses only, but it will, in practice, be adjusted by the local Board, the water-rate being laid upon houses only, and the sewer-rate both upon houses and land, but on the latter in the proportion but of one-fourth. The actual rate, therefore, will be low. The estimate does not include the water-pipe and drain into each house, since this belongs less to the general than to the private improvement rates to be borne by the owners of house property.

83. This last expense, however, is so arranged as to fall lightly upon the individual. Thus if the drains, water-pipes, &c., of a court amount, say to 4l. per house, and the work be executed by the contractor under the local Board, the rate charged will be 1d. per week, or 4s. 10d. per annum. Of course if the owner choose to pay for these works at once, or himself to execute them to the satisfaction of the local Board, he will be allowed to do so. The general works will, however, be executed and kept in repair by contract, as will the highways of the district, under the same local Board. The rate includes cost of establishment, and that portion of it which is intended to cover the actual construction of the works is calculated to discharge principal and interest, at 5l. per cent., in equal annual payments, for 30 years, when the debt will be extinguished.

84. The cost of the proposed remedies will be equivalent, in the case of the poorest houses, to a payment by general rate of— for Nuneaton 1*d.*, and for Coton 1½*d.* per house per week ; and for this, in addition to the landlord's outlay, amounting to about 1*d.* more, will be secured a supply of soft water in each house, always on, given by means of a pipe and tap, and without any necessity for a butt or tank. From each tap a sink and pipe-drain will lead off the waste water. The yards and courts will be pitched or paved and drained, the privies drained and supplied with water, and the cesspools filled up, and in their place proper bins for ashes and dry dust provided. These works will be executed and maintained by contract. The whole of their cost and management will be under one control, and the sewage will be collected in the form best suited to provide a cheap and efficient manure. There will be a direct saving in soap, soda, and the labour of fetching or the cost of purchasing water, and there will be a larger and far more important indirect saving in the diminution of sickness, and of the rate of mortality, in the amount of out-door relief, and in the securing to the poor, and the poorest, those comforts for the want of which their homes are rendered distasteful, and an excuse afforded to them for spending their time, health, and money, at the public-house.

85. It is difficult to over estimate the advantages of the proposed remedies to populations like those of Nuneaton and Attleborough, subsisting on a very uncertain branch of manufacture, and one which confines them throughout the day to their own crowded dwellings.

86. My instructions direct me to advise concerning the constitution of the LOCAL BOARD. I have to recommend strongly that these two parishes be combined for administrative purposes under one Local Board. Nor, indeed, should this combination cease here, though it would be premature until I shall have carried out the instructions of the Board in visiting the adjacent parish of Bulkington, to enter further upon this question. In the present case I recommend that the joint Board of Nuneaton and Chilvers Coton should not exceed the lowest limits fixed by the Act. Upon the constitution of this Board it is obvious that the success of the measure must, as the Act now stands, almost entirely depend ; and it will be very important to secure a body free from party prejudice and party feelings, and prepared to execute and carry out cheaply and efficiently the necessary measures. As the cost of the proposed remedies falls upon a part of the land only and upon no part with more than one-fourth of the share contributed by the house property, the farmers will, it is to be hoped, see that they have no reason to complain.

87. This difficulty of securing an unprejudiced Local Board,

which I am very sure will be admitted by several persons largely interested in the town, I feel to be a very serious one, and it is one, I regret to say, common to Nuneaton with several other village-towns governed in the old village system.

88. SUMMARY. It appears,—

1. That the mortality is excessive, being higher considerably than that of the registration district, or than the mean mortality of the county.

2. That this mortality is chiefly due to fever and epidemic diseases, which are found to prevail in the low, undrained, and filthy parts of the district, and are directly attributable to the want of drainage, and of a proper water supply, and to the presence of cesspools and other deposits of filth, of pigsties, and of unpaved or ill paved streets and courts.

3. That these evils are the cause of considerable expenditure ; direct in the purchase of water, soap, and soda ; indirect in sickness and pauperism, and the concomitants of an excessive mortality.

4. That the remedies of a complete main and house drainage, a constant water supply, the substitution of water-closets for privies, and the proper paving of the street and court surfaces, may be applied at a charge not exceeding a rate, for the poorest houses, of 1*d.* a-week in Nuneaton, and 1½*d.* in Coton.

5. That the town, having pipes laid down and gas works established, remains unlighted, owing to a want of agreement between, and of a proper system of government among its own inhabitants and the remainder of the parishioners.

6. That the costs of the proposed remedies will be in reduction of existing charges.

7. That the disposition of the lands below the town is such as to admit of the employment of the sewage as liquid manure, to the production of revenue to the town.

8. That if the Local Board in Nuneaton be constituted as the Act at present directs, and be under no other control than that implied in the ultimate check by the General Board upon the raising money, it is possible that a want of unanimity of action among its members may mar the efficiency and augment the expense of the proposed works.

I have the honour to be,

My Lords and Gentlemen,

Your obedient servant,

GEO. T. CLARK.

The General Board of Health,
&c. &c. &c.

PUBLIC HEALTH ACT,

(11 & 12 Vict., Cap. 63.)

R E P O R T

TO THE

GENERAL BOARD OF HEALTH,

ON A

FURTHER INQUIRY

HELD IN THE

PARISH OF CHILVERS-COTON, IN THE COUNTY OF
WARWICK,

IN CONSEQUENCE OF THE PROPOSED ALTERATION OF BOUNDARY FOR
THE PURPOSES OF THE PUBLIC HEALTH ACT,

By G. T. CLARK,

SUPERINTENDING INSPECTOR.



L O N D O N :

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FOR HER MAJESTY'S STATIONERY OFFICE.

1850.

NOTIFICATION.

THE General Board of Health hereby give notice, in terms of section 9 of the Public Health Act, that on or before the 18th of April next written statements may be forwarded to the Board with respect to any matter contained in or omitted from the accompanying Report on a further Inquiry held in the Parish of CHILVERS-COTON, in the County of Warwick, in consequence of the proposed Alteration of Boundary for the purposes of the Public Health Act; or with respect to any amendment to be proposed therein.

By order of the Board,

HENRY AUSTIN, *Secretary.*

*Gwydyr House, Whitehall,
11th March, 1850.*

PUBLIC HEALTH ACT (11 & 12 Vict., cap. 63).

Report to the General Board of Health on a further Inquiry held in the Parish of CHILVERS-COTON, in the County of Warwick, in consequence of the proposed Alteration of Boundary for the purposes of the Public Health Act. By G. T. CLARK, Superintending Inspector.

Chilvers-Coton, 16 January, 1850.

MY LORDS AND GENTLEMEN,

I HAVE the honour to inform you that pursuant to your instructions, and after notice given as directed by the Public Health Act, I held a public sitting at Chilvers-Coton, in the county of Warwick, at three o'clock in the afternoon of this day, in the Infant School, to hear evidence on the subject of the boundaries proposed in my Report of the 30th March 1849, and more particularly upon the combination, for administrative purposes, of the parish of Chilvers-Coton with those of Nuneaton and Bulkington, as recommended in the same Report.

A large number of persons attended the meeting, and took part in the proceedings. The question of the administrative combination of the parishes was especially inquired into, and a variety of reasons arising out of local feelings and circumstances were strongly and unanimously urged to show that the efficient working of the Act would be impeded by the proposed union; in consequence, after having carefully reconsidered that question, I recommend that the Public Health Act be applied to the whole petitioning parish of Chilvers-Coton alone.

I have the honour to remain,
My Lords and Gentlemen,
Your obedient servant,

GEO. T. CLARK.

*The General Board of Health,
 &c. &c.*



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